Detector Simulations with DD4hep

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Motivation

- **Complete Detector Description**
  - Providing geometry, materials, visualization, readout, alignment, calibration...

- **Supports full experiment life cycle**
  - Detector concept development, detector optimization, construction, operation
  - Facile transition from one stage to the next

- **Single source of information → consistent description**
  - Use in simulation, reconstruction, analysis, etc.

- **Ease of Use**
- **Few places for entering information**
- **Minimal dependencies**
Summary and Conclusion

- DD4hep provides a consistent single source of detector geometry for simulation, reconstruction, analysis
- Enables the simulation of particle collisions in detectors with minimal effort: simple, easy, flexible
- The DD4hep toolkit is getting accepted by wider hep community
  - Use by CLIC, ILC, FCC Communities
- Development continues in parallel with validation
- DD4hep can host user plugins: extensible
- Continued plugin suite development to cover all simulation needs (I/O, MC truth, etc)